

Hampton Falls - Hampton I-95 Bridge & Taylor River Pond Dam Project



Agenda

- Welcome
- Partners
- Goals
- Need
- Alternatives
- Impact Assessment
- Next Steps
- Questions or Comments

Project Partners

- **NH Department of Transportation**
- **NH Department of Environmental Services**
- **NH Fish & Game Department**
- **Piscataqua Region Estuaries Partnership**
- **National Oceanic and Atmospheric Administration (NOAA)**
- **US Fish and Wildlife Service**
- **Gulf of Maine Council**

Goals of Meeting

- **Solicit Final Input on Feasibility Study**
(Draft July 24, 2009)
- **Present Preferred Alternative**
- **Solicit Input on Preferred Alternative**

Project Area



to Seabrook ←

→ to Portsmouth

Bridge, Dam and Fishway



Need for the Project

- **Flooding concerns adjacent to Taylor River Pond**
- **Deteriorated Bridge**
- **Deteriorated Dam**
- **Deteriorated Fishway**

Summary of Alternatives

- **Alternative A: No Action**
- **Alternative B: Replace Bridge and Dam**
- **Alternative C: Replace Bridge Only (No Dam)**



Impact Assessment

- **Flooding**
- **Sediment / Water Quality**
- **Fisheries**
- **Species of Concern**
- **Wetlands**
- **Recreational Values**
- **Wells / Fire Protection**
- **Cultural Resources**
- **Socio-Economics / Property Values**

Flooding

- Existing arrangement helped contribute to major flooding during May 2006 Mother's Day Flood when flood waters reached elevation 16.0 +/-
- Home sills at elevation 14.25 +/-



Sediment in Taylor River Impoundment

- Thickness: 1 foot (on average)
- Clay to medium sand
- Contain pesticides
 - No risk for human health from exposure to sediment
 - No risk from fish consumption if health advisories are followed
 - Sediment at lower impoundment poses risk to bottom-dwelling aquatic organisms and birds (based on limited risk assessment)
- Alternatives B and C require mitigation



Water Quality

- Salinity
- Dissolved Oxygen (DO)
- Nutrients
- Aquatic Plants



Fisheries

Diadromous Fish in the Taylor River

American eel



River herring

Alewife



Blueback herring



Resident Fish in the Taylor River Impoundment Warmwater Species

Largemouth bass



Common Sunfish



Eastern chain pickerel

Fisheries

➤ Alternative A (No-Build):

- Diadromous and resident species continue to be affected by eutrophic environment.

➤ Alternative B (Replace Bridge and Dam):

- (same as Alternative A)

➤ Alternative C (Replace Bridge Only):

- Freshwater fish species in freshwater reach and estuarine and migratory species in tidal reach.

Species of Concern

- No federally listed or proposed threatened species or critical habitat
- The New Hampshire Natural Heritage Bureau has documented four state-listed estuarine plant species in the Hampton River Estuary but well beyond the limits of the project study area. One historic record of the banded sunfish (*Enneacanthus obesus*) at Towle Farm Road crossing, not formally state-listed but is considered vulnerable.

IMPACTS

- Alternative A: None
- Alternative B: No impact to state-listed estuarine plant species, improved fish passage may have slight benefit to the forage base for the banded sunfish
- Alternative C: No impact to state-listed estuarine plant species, loss of freshwater aquatic habitat would greatly reduce the amount of suitable habitat for the banded sunfish

Natural Resources - Wetlands

- **Alternative B, Replace Bridge and Dam**
 - No change to existing wetland types
 - Benefits from increased forage base

- **Alternative C, Replace Bridge Only**
 - Major habitat conversion from freshwater pond to mosaic of tidal creek, salt marsh, freshwater marsh and wooded wetlands
 - Loss of freshwater wetland functions while expanding former estuarine community

Recreational Use

- Fishing
- Boating
- Bird Watching
- Ice Fishing
- Ice Skating



Well Data

- **No Public Water Services in Hampton or Hampton Falls, all Private or Community Wells**
- **Researched Well Data within 1/4-mile of Taylor River Pond**
- **3 Community Wells:**
 - **2 Serving Taylor River Estates**
 - **1 Serving Hemlock Haven Mobile Home Park**
- **248 Private Property owners within Study Area:**
 - **118 use community wells**
 - **130 use private wells**

Well Data (cont.)

➤ Alternatives A and B:

- No impacts to wells.

➤ Alternative C:

- Shallow wells: Potential intrusion of salt water within 200 feet of pond.
- Bedrock wells: Less likely to be impacted than shallow wells.
- Community wells: Potentially impacted due to higher pumping rate; however, unlikely due to distances (700 and 1,200 feet) from pond and higher groundwater levels

Fire Protection

- **Existing Fire “Dry Hydrant”:**
 - On Towle Farm Road, in Hampton Falls
 - None using Taylor River in Hampton

- **Alternative A (No-Build):**
 - No Impacts
 - Spillway Failure = Fire Protection Impaired until repaired

- **Alternative B (Replace Bridge and Dam):**
 - No Impacts

Fire Protection (cont.)

➤ Alternative C (Replace Bridge Only):

- Not enough storage for Use of Dry Hydrant
- 100,000 gal Concrete Fire Cisterns required by Town Fire Chiefs:
 - Cistern #1 - NE side of Towle Farm Road, in Hampton
 - Cistern #2 - SW side of Towle Farm Road at Brown Road Intersection, in Hampton Falls
 - Each with Dry Hydrant, Gravel/Paved Pull-off area, and Concrete-filled Bollards for Traffic Protection

Cultural Resources

National Historical Preservation Act / Section 106

- **Architectural Resources: N/A**
- **Archeological Resources: Potentially with Dam Removal**
- **Consulting Parties**

Potential Market Values

Potential Market Value Loss with Dam Removal

- **20 % on Taylor River Pond Waterfront Properties in Hampton**
- **10% on Common Access Waterfront Properties in Hampton**
- **5% on Hampton Falls Properties**

(Source: May 20, 2009 NHDOT memo)

Property Values

Provencher, B.; Sarakinos, H.; and Meyer, T. 2008. Does small dam removal affect local property values? An empirical analysis. Contemporary Economic Policy 26(2): 187-197.

- No statistical impact of dam removal on resale values of waterfront properties relative to properties on intact impoundments
- The most valuable properties were at sites where the river has been free-flowing for at least 20 years

Lewis, L.; Bohlen, C.; and Wilson, S. 2008. Dams, dam removal, and river restoration: A hedonic property value analysis. Contemporary Economic Policy 26(2): 175-186.

- Properties near dams have lower value than similar properties further away
- Land values are tied to water quality

Summary of Impacts

| Resources | Alternative A No Action | | Alternative B Replace Bridge & Dam | | Alternative C Replace Bridge, No Dam | |
|----------------------------------|----------------------------|-----------------------|---------------------------------------|-----------------------|--|-----------------------|
| | Adverse Impacts | Beneficial Impacts | Adverse Impacts | Beneficial Impacts | Adverse Impacts | Beneficial Impacts |
| Flooding | Major | None | Negligible | Moderate | None | Major |
| Dry Fire Hydrants | None | Moderate | None | Moderate | Major | None |
| Socio-Economic | Negligible | Negligible | Minor | Minor | Moderate | Moderate |
| Recreational Use | None | None | Minor | Minor | Moderate | Moderate |
| Cultural & Historical | None | None | Minor | None | Moderate | None |
| Water Quality | None (4) | None | None | None | Moderate | Major |
| Fisheries | Moderate | None | Moderate | Moderate | Major | Major |
| Species of Concern | None | None | None | Minor | Negligible | Moderate |
| Wetlands | Minor | None | Negligible | Minor | Moderate | Major |

Conceptual Construction Cost Estimate

| | | |
|---|---------------------------------|--------------------|
| Alternative B: Replace Bridge and Dam | Spillway/Culvert Removal | \$385,000 |
| | New Dam/Fishway | \$1,417,000 |
| | New Bridge | \$4,840,000 |
| | Sediment Removal and Disposal * | \$200,000 |
| | Roadway and Traffic Control | \$1,900,000 |
| | Total = | \$8,742,000 |
| Alternative C: Replace Bridge, No Dam | Existing Bridge/Dam Removal | \$385,000 |
| | New Bridge | \$4,840,000 |
| | Sediment Removal and Disposal * | \$685,000 |
| | Fire Cisterns | \$750,000 |
| | Roadway and Traffic Control | \$1,900,000 |
| | Total = | \$8,560,000 |

Preferred Alternative

Alternative B, Replace Bridge and Dam

**DOT, Bureau of Turnpikes looking for someone to
take over Maintenance Responsibility of the Dam**

Next Steps

- Preferred Alternatives Meeting (today)
- Finalize Feasibility Study
- Future Public Meeting (if needed)
- Final Design 2011
- Secure Necessary Permits
- Begin Construction 2013

Questions or Comments

